

A Clinical Lecture

~ON~

1. Case of Polio=Myelitis.
2. Case of Chorea.
3. Case of Sacro=Iliac Arthritis, etc.

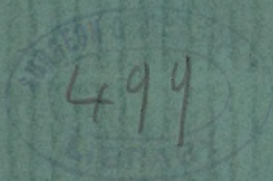
(PROBABLY RHEUMATIC.)



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(I) Polio-Myelitis ; (II) Chorea ; and (III) Arthritis Affecting the Right Sacro-Iliac Joint and the Intervertebral Substance in the Lumbo-Sacral Region of the Spine (Probably Rheumatic).*

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Gentlemen,—I shall bring before you to-day, first, the man whose case we studied last Saturday. The case is one of *polio-myelitis*, localized between the sixth cervical and first dorsal segments of the cord on the right side, involving, to the greatest extent, the shoulder and upper arm-muscles, especially the deltoid, biceps, and triceps. I told you last week that if the muscular wasting and diminution of electric irritability steadily progressed, the prognosis would not be nearly so favorable as it would if they did not progress further. This week he can move the deltoid muscle, which he was unable to do last week. He now can carry the index of the dynamometer up to fifty. Last week he was unable to move it at all. There has apparently been no muscular wasting during the week ; so we have a distinct improvement, and probably the muscles will soon gain a fair amount of power, and he will be able to leave the hospital in four or five weeks. More depends, in the ultimate prognosis of a case of *polio-myelitis*, upon the character of the response of the muscles to electricity than upon anything else. This patient was discharged at the end of six weeks from

*A Clinical Lecture delivered at the Arapahoe County Hospital, Stenographically Reported and Revised by Author.



the time he entered the hospital, and was able at that time to resume work.

CASE II.—The *second case* which we will study to-day will be that of the little patient before us. Her name is Rose K., æt. 14, Austria. So far as she knows, although she does not seem very conversant with her family history, there is nothing of importance in it. I can neither find history of diseases of the nervous system nor of the lungs. She states that she came to this country in 1886, and was in perfect health until one year ago. She never began to menstruate until September of this year. One year ago, the right side of the jaw began swelling, and the swelling extended over the right side of her body. This continued for six months. The swelling and pain were limited to the right side of the body, especially the arm, hip, and leg, down to the knee. She states now that the entire right side was swollen. As I find, on further inquiry, the swelling principally affected the right side of neck instead of jaw, I am inclined to think that the swelling and pain were due to some vaso-motor trouble. At the end of six months the swelling disappeared, and she began to be affected with twitching, which began in her hands. She was admitted to the hospital last Saturday, or a week ago to-day. At that time there was violent twitching of all the voluntary muscles of the body, especially of the legs and arms. At times, the jerking of the muscles was so violent that it was difficult to keep the patient in bed. The grimaces of the face were well marked.

The *diagnosis* here lies between two diseases, athetosis and chorea. *Athetosis* is a disease which more commonly follows severe lesions of the brain, especially giving rise to hemiplegia, where the lesion is somewhere in the region of the optic thalamus. Athetosis, as a rule, is unilateral. The movements of athetosis and chorea differ.

The word athetosis means the want of fixation. The parts are rarely ever still when the patient is awake. The motions are never quick and jerky, but there are all kinds of movements. There is frequently a vermicular-like movement of the fingers. Some fingers are slowly being flexed, whilst others are being extended. From absence of the characteristic movements of the athetosis, we can exclude this disease.

The movements of the limbs are typical of a fully devel-

oped case of *chorea*. Generally, there is no gross pathological lesion of *chorea*, but this is not always the case.

There are several forms of *chorea*. One form, known as *congenital chorea*, is hereditary, being transmitted from generation to generation, and coming on rarely before the thirty-fifth or fortieth year, and ends in mental degeneration, usually by the forty-fifth year. This form of *chorea* is not unilateral. I have seen one case of this variety, and in that case the family history, as far back as four generations, revealed cases of *chorea* which had begun by the thirty-fourth year, and the victims had become mentally deranged by their forty-fifth year. Hereditary *chorea* was first described by *Huntington*, and it has been known by his name.

We have a condition of *chorea* known as *habit chorea*, where one child associating with another one who is suffering with *chorea* begins to mimic it, and the nervous habit begins to take place, which may become more or less permanent. The patient before us is suffering from the ordinary form of *chorea*. The severer cases present some gross pathological lesions. They are usually due to perivascular extravasation, but this only in the severe forms. The majority of cases have no gross anatomical lesion. In some, we find the lesion in the pons, the medulla, or cord.

Probably one of the commonest *causes* of *chorea* is rheumatism. In this country, fifteen to twenty-five per cent. of all cases of *chorea* apparently have rheumatism for their cause. Some state that the greatest exciting cause is fright; this is denied by other observers. Many of the cases of *chorea* that have come under my care since I have been in Colorado have apparently been precipitated by fright. A child running along the street meets a large dog, becomes severely frightened, and choreic movements begin a few days or weeks later. Other causes are straining of the eyes, over-study, and confinement. While *chorea* is not necessarily hereditary, the unstable condition of the nervous system generally is. In cases of nervous irritability, an additional nervous fright or strain of any kind may be sufficient to induce an attack of *chorea*.

The *symptoms* of chorea, as a rule, do not come on suddenly. They begin in one hand or one side of the face, or, in rare instances, they may begin in the leg. It is, at first, simply an unsteady movement, or an occasional twitching, and the twitching movement, when it does occur, is always sudden and jerking in character. It is never slow, like the movements of athetosis. Whenever the patient becomes nervous, the twitching becomes more violent. In some cases, we have what is known as *chorea magna*, or chorea going on to such a condition that the movements are so violent that it is scarcely possible to keep the patient in bed. In the case of hereditary chorea to which I referred a few minutes ago, the patient was frequently thrown out of bed by the violence of the muscular contraction. I have seen him thrown off his feet while walking along the street, his limbs being in the most grotesque positions by the insane actions of the muscles.

Chorea, untreated, as a rule, lasts from six to twelve weeks. It is a disease a good deal like rheumatism. Sydenham was asked one day what was the best cure for rheumatism. He said, "Six weeks." This girl has been suffering with chorea six months.

Some cases of chorea do not end in six weeks, six months, or even six years. There is a tendency for them to become chronic. I have at present five cases of *chronic chorea* under my care. None of them have lasted less than five years, and one has existed for twenty-one years. Only one of these began in Colorado. None of these cases have been made worse by a residence at this altitude, 5,000 feet above sea level.

It may well be asked, what is the best *treatment* for chorea, or whether there is a mode of treatment by which the duration of the disease can be lessened?

The patient before us, on admission to the hospital, some seven days ago, had been affected with choreic movements for six months, and much of the time had been under some treatment for the disease, but she did not seem to be benefited. It would seem, then, that if a course of treatment,

adopted at the time of her reception here, were attended by decided beneficial results, we might attribute to it some curative power of the disease, in her case, at least.

Now, remember that I told you on her admission into the hospital that the jerking of the limbs was so violent that it was with difficulty she was kept in bed. Before coming to the hospital, and throughout the entire six months of her choreic trouble, she had been allowed to sit up and walk at pleasure. I had her placed in bed and secured, so that she could not fall out and hurt herself; and, at the same time, I gave her twelve grains of antipyrine thrice daily, and increased the dose one grain each day. She is at present taking seventeen grains of the drug, thrice daily, without experiencing any unpleasant results. All the violent twitching has now subsided, and I shall request the resident physician to give only one dose of antipyrine daily, and to let this be at 8 P. M. We will order for this purpose about eighteen grains. By the administration of this dose at 8 P. M. we shall secure for the patient a good night's rest, which is very important in these cases. I shall also direct that she be given two minims of Fowler's solution of arsenic in water after each meal, and request the dose to be increased one minim each day until the physiological effects of the medicine are obtained, when the arsenic will be discontinued for a few days, and then resumed and increased as before. It is probable that by the end of another week all twitching of the muscles of any magnitude will have ceased, when the antipyrine may be discontinued, but the arsenic will be pushed to its full physiologic effects, unless the disease be cured before this is accomplished.

The measure of the first importance in the treatment of all cases of chorea, except the very lightest, is absolute rest in bed. The rest in the recumbent posture should be maintained until the disease is practically cured. If all cases of chorea were treated with rest, it is probable that we should see fewer cases of chronic chorea. So far, I have not seen an acute or sub-acute case of this disease pass into the chronic variety where rest had been insisted upon in the early stage of the malady.

As the mode of treatment adopted in the patient before us is not the one usually followed for the treatment of

choreic patients, it seems to me that I may, with advantage to you, call your attention to it a little more in detail.

In all cases of chorea, I insist upon my directions being carried out implicitly; and if those who have charge of the patient show any hesitancy in doing this, I refuse to assume charge of the patient until I feel that I can rely upon their complete co-operation.

In the *mildest cases* of chorea, in which there is only an occasional twitch of a muscle, the patient is not confined to the bed, but is allowed to sit part of the day, and to lie on a lounge an hour or two during the forenoon and afternoon. The little patient is allowed to amuse himself, but no running, romping, or violent exercise is permitted. When the weather is such as to permit it, sitting in the open air is encouraged. The food is nutritious, digestible, but non-stimulating. The condition of the stomach and bowels is always carefully looked after. At the beginning of the treatment, the patient receives as many grains of antipyrine at bed-time as he is years old, and the dose is increased one grain each day until all muscular twitching stops. In such mild cases, arsenic is given from the first; one minim of Fowler's solution is given, well diluted with water, after each meal, thrice daily, and the dose is increased one minim each day until the point of tolerance of the medicine is reached, when it is discontinued for two or three days, or until all unpleasant effects of the drug have passed away. At the end of this time the arsenic is resumed at the dose reached when its administration was discontinued, and again the dose is increased one minim each day, if all twitching has not ceased. But, if all choreic movements have stopped, the dose is not increased from day to day, but is simply kept at the dose reached when it had to be discontinued.

As soon as the inco-ordinate muscular twitching ceases, the antipyrine is stopped, and the syrup of the iodide, or the tincture of the chloride of iron is given in two to five drop doses after each meal, thrice daily. The arsenic and iron are continued for two or three weeks after the disease

is apparently cured, and the patient is encouraged to be in the open air as much as possible during the period of convalescence, but is cautioned against violent exercise or fatigue.

In all cases of chorea, except the mildest, absolute rest in bed, day and night, is insisted upon from the first, until all choreic twitching has ceased whilst the patient is quiet. I will reiterate here what I have said on former occasions, that "if I had to rely upon one method of treatment in the management of chorea, to the exclusion of all others, I should unhesitatingly choose absolute rest in bed." On sending the patient to bed, I order for the severer forms of chorea in children as many grains of antipyrine, thrice daily, as the patient is years old, and increase the dose one grain daily until all violent movements have subsided, when I begin with one minim of Fowler's solution after each meal, and give only one dose of antipyrine each night at bed-time, or about eight or nine o'clock. As soon as most of the choreic movements have ceased, the antipyrine is stopped, and the syrup or the tincture of the chloride of iron is given thrice daily, after meals, and, at the same time, the arsenic is continued in increasing doses until the desired effect is obtained.

For one who has not used *antipyrine in large doses in chorea*, it will seem a little heroic to him to give a child, eight or ten years of age, twelve to fifteen grains of antipyrine thrice daily. It must be remembered that it is not necessary to continue this depressing agent long at a time. You should always observe certain precautions.

In the first place, antipyrine must not be administered for its anti-spasmodic effect when there is an elevation of temperature, else the free diaphoresis which will result will be attended with considerable depression. In choreic cases with rise of temperature, chloral may replace the antipyrine, but I would not advise the dose of the former to be carried to what I have recommended for the latter.

Secondly, it is necessary that the patient be kept at rest in bed while he is taking antipyrine. I have seen considera-

ble depression follow the administration of antipyrine, when this precaution has been neglected. The patient should be seen, at least once, if not twice daily, while antipyrine or chloral is being administered. In cases where there is cardiac weakness from any cause, antipyrine or chloral must be given, if at all, with great caution. Under such circumstances, I prefer one or two-grain doses of phenacetine in combination with citrate of caffein and minute doses of *cannabis indica*, given every two or three hours.

In the administration of arsenic to children in increasing doses, see your little patient frequently, examine the urine at least every second day, and suspend the medicine as soon as you get its desired physiologic effects, and then resume its administration as soon as the systemic disturbances have disappeared. Never give arsenic in full doses continuously for more than ten days or two weeks at one time. By administering arsenic intermittingly, the system has an opportunity to get rid of most of the accumulated metal, and it is probable that the annoying cases of arsenical neuritis may be avoided by this precaution in its administration, especially when it is desirable, as it is in chorea, to keep the system under the influence of the medicine for a number of weeks.*

CASE III.—The third case to which I wish to direct your attention, is one of considerable interest on account of the difficulty of arriving at an accurate diagnosis.

The patient is a man, *æt.* 60, Ireland; railroading; family history unimportant. His usual weight before his illness was 175 pounds. In 1867 or 1868, he contracted malaria in Illinois, and suffered from intermittent fever for six successive years. During the time he was suffering from malaria, he contracted a heavy cold by getting his clothing thoroughly wet through one July day. The exposure was followed by severe pain in the lower portion of the spine and the right hip. The pain extended down the outer side of the right thigh, leg, and foot. He states that at that time

*The patient who was the subject of the above discussion was discharged "cured" five weeks after the treatment was begun, and during three weeks of this time there had been scarcely any muscular twitching.

there were two small areas, one on the outer side of the right calf, and one on the outer side of the right foot at the margin of the plantar surface, which were completely anæsthetic. The attack lasted about three weeks, and he seemed to regain his former good health after getting rid of the malaria. After this he enjoyed fairly good health until he came to Denver three years ago. About two years ago, he had pneumonia, and was confined to his bed for three weeks. During this illness he lost a great deal of flesh. Two months later, he began to complain of a lightness in his head, and his stomach became irritable. This indisposition lasted about two months.

Two months ago, he got his feet wet, and following this he suffered from severe pain in the lower portion of the spine and in the right hip. When he moved, the pain extended to the right knee, and sometimes as low as the right foot. At times he suffered from pain in his left hip, especially when he coughed. At times the pain, he thinks, extended from each hip to the lumbar region of the back. He says that the right knee and ankle became weak, but he was able to use them. He improved in a short time and resumed his work, but the pain in the back and right hip became so severe that he took to his bed, and has been thus confined since—a period of about two months. He has no pain when lying quietly in bed, but when he is sitting or standing, he experiences constant pain in the back and hips.

Examination—He walks fairly well, but a little feebly; no ataxia. When his legs are straight at the knees, he can bend his body well forward, showing that the sciatic nerve is not the seat of pain when put upon the stretch. Knee jerks, about normal and not much increased by reinforcing; ankle clonus absent, and no pain is caused by test for this phenomenon; extreme voluntary dorsal flexion of right foot causes him to experience pain in the region of the right hip; cremaster reflexes present; lower abdominal absent; epigastric present; power of leg muscle well preserved.

Measurements—Calf, right, $11\frac{3}{4}$ inches; left, $11\frac{3}{4}$ inches. Thigh, right, $14\frac{3}{4}$ inches; left, $14\frac{3}{4}$ inches. Flexion of the right leg at hip with knee straight causes no pain until the leg is brought at about right angles to the body, when pain is felt in right sacro-iliac joint. The left leg in same position at knee can be carried beyond right angle to the body without giving rise to any pain. Forcible pressure on the pelvic bones with one hand on each superior spinous process of the ilium causes pain in right sacro-iliac joint, and

in the region of distribution of right small sciatic nerve. Pressure on the last lumbar and first sacral spines causes pain in the region of their vertebræ, but it causes no pain to radiate to either side of the spinal column, or to the region of the sciatic nerves. There is no tenderness over the nerves of the legs. He complains of a sore and painful sensation in the calf of the right leg, but the spot that is the seat of this pain is not tender to pressure. All objective sensory phenomena of the legs are normal.

Rectal examination reveals the presence of no growth in the pelvis. There is no decided muscular wasting of the legs, and all bladder and rectal symptoms are absent. He is considerably reduced in flesh. The right thigh, as shown by the measurements, is one-half inch smaller than left.

Diagnosis—Now let us endeavor to determine the nature of this man's ailment. He has been treated for rheumatism during a number of months preceding his admission into the hospital.

This is a very common diagnosis for all obscure pains of the body and limbs. Let us endeavor first to make a diagnosis on an anatomical basis, and then we shall be better prepared to study the disease from its pathological standpoint. The history of recurring pains in the region of the right sciatic nerve, especially in the terminal distribution of this nerve without tenderness of the nerve to pressure, points to neuritis of this nerve, caused by some offending body infringing upon the nerve roots, either in the spinal or vertebral canals, or in the course of the nerve through the pelvis. Pressure on the nerve in the pelvis might be caused by a tumor or an exudate, or in the spinal or vertebral canals by tumor, meningitis, or by bone trouble.

A thorough examination of the cavity of the pelvis eliminates the presence of a tumor or an exudate as the cause of the pressure on the affected nerves in this portion of their course. The absence of growth in other portions of the body, the insignificance of the pain in comparison to what we find from the irritating effects of tumors on the cauda equina, and the presence of symptoms of bone

trouble, justify us in excluding tumor in the spinal canal as the cause of this man's suffering.

The sensitive condition of the right sacro-iliac joint, the recurring pains in this joint on the left side, and the tenderness in the last lumbar and first sacral vertebræ are significant of a *chronic affection of the bones*, their periosteum, or their articular substances. The formerly intermitting, and at present, remitting, character of the pain, points to the periosteum, or the intervertebral and interarticular substance as the seat of the irritation. It is probable that the dura, which forms, as you know, the sheaths of the spinal nerves, is probably also involved in the irritation. In the absence of the history of any injury to the spine, or the presence of tuberculosis in any other portion of the body, it is probable that this man's trouble is a rheumatic arthritis, affecting the joints that are the seat of pain.

From the study of a number of cases somewhat similar to the one now before us, I am convinced that chronic rheumatism more commonly affects the joints and ligaments of the spinal column than we have been led to believe from the total silence or short references of standard works to this affection. We have three such cases in the hospital at present. They have all been referred to the neurological department, because their symptoms pointed to trouble in the nervous system. If I am right in locating the trouble in the joints of the spine, it is easy to understand why the pain is intermitting or remitting; and if it is rheumatic in nature, why it is so infrequently followed by serious bone trouble or nerve degeneration. When these joints are inflamed, the dural sheaths of the nerves become irritated, and give rise to pain in the course of the nerves that pass through the affected portion of the dura.

Whether these cases are rheumatic in their nature or not, the treatment is the same as it is in other cases of bone disease. The prognosis, however, differs from that of tuberculous or traumatic bone affection, as breaking down of bone is almost unknown to occur from rheumatism, and the or-

ganic changes that take place in the osseous system are limited to the articular structures.

The *treatment* should consist of rest in bed, counter-irritation over the lumbo-sacral region of the spine, and over the affected sacro-iliac joint, and internally the administration of potassium iodide in about ten grain doses after meals, thrice daily. The diet should be generous and nutritious, but non-stimulating. Milk, eggs, fish and oysters are preferable to a generous meat diet in rheumatic subjects.

A few remarks in regard to the *manner of applying counter-irritation in the milder forms of bone disease*, especially of the spinal column and the sacro-iliac joints. In a few cases, thorough vesication with the Spanish fly seems to accomplish the desired result; but after a rather extended experience in the treatment of these affections, I am convinced that the actual cautery is more effectual, and shortens the course of the bone trouble very much. For persons who are not too timid, repeated light applications of the cautery, at white heat, without administering an anæsthetic to the patient, are the most desirable. However, as most persons shrink from having the hot iron applied to them unless they are under the influence of an anæsthetic, it is better to burn pretty thoroughly and less frequently.

In some cases of bone trouble, when I have succeeded in effecting only temporary benefit from weekly applications of a blister extending over a period of several months, the thorough application of the actual cautery has accomplished more in weeks than blistering had done in as many months. The use of the actual cautery and absolute rest in bed, together with the administration of potassium iodide, occasionally alternated with sodium salicylate, enabled the patient to walk without pain or discomfort in about two months after he entered the hospital.

